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EXAMINER

WEBB, GREGORY E

ART UNIT

PAPER NUMBER

1751

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,849

Applicant(s)

DAMASO ET AL.

Examiner

Gregory E. Webb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 04 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-108 is/are pending in the application.
- 4a) Of the above claim(s) 55-108 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,8
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

The following action is in response to the applicant's election of group I, claims 1-54.

The applicant argues no serious burden is being placed on the examiner, but does not elucidate on this point. The examiner argues that a serious burden is being placed because the applicant is claiming two very distinct inventions. The first group is directed to a process. The second group is directed to a pressurized system for cleaning. The applicant's process can be performed by numerous distinct systems and are not directly correlated with the applicant's claimed system. For example the system of claim 55 requires a pump. There are no limitations in claim 1 that are directed to a pump. The process of claim 1 could be performed with valves only as the cleaning solvents could be stored in a pressurized vessel.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Instant claim 1 currently requires two cleaning steps. The first step involves cleaning with at least an organic solvent (noting that other components can be added). The second step involves cleaning with at least a pressurized fluid. Neither of these cleaning steps as they are written exclude the components found in the other cleaning step. For example, if clothes were cleaned twice in a system using pressurized fluid in combination with an organic solvent, the instant claims would be met as the first step would contain an organic solvent/pressurized fluid and the second step would contain the pressurized fluid/organic solvent. If the applicant wishes to more clearly distinguish these steps, the claims should be written so that first step in cleaning is clearly distinguished from the 2nd step of cleaning. This could be done by more clearly defining the component in these step, defining weight percentage, or excluding components.

Claims 1, 14-17, 28-35, 42-44, and 54 are rejected under 35 U.S.C. 102(b) as being anticipated by Romack et al (US 5,858,022).

Romack teaches the following two step process using CO₂/organic solvent to clean and CO₂ to rinse:

In practice, in a preferred embodiment of the invention, an article to be cleaned and a liquid dry cleaning composition as given above are combined in a closed drum. The liquid dry cleaning composition is preferably provided in an amount so that the closed drum contains both a liquid phase and a vapor phase (that is, so that the drum is not completely filled with the article and

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the liquid composition). The article is then agitated in the drum, preferably so that the article contacts both the liquid dry cleaning composition and the vapor phase, with the agitation carried out for a time sufficient to clean the fabric. The cleaned article is then removed from the drum. The article may optionally be rinsed (for example, by removing the composition from the drum, adding a rinse solution such as liquid CO.sub.2 (with or without additional ingredients such as water, co-solvent, etc.) to the drum, agitating the article in the rinse solution, removing the rinse solution, and repeating as desired), after the agitating step and before it is removed from the drum. The dry cleaning compositions and the rinse solutions may be removed by any suitable means, including both draining and venting. (see col. 3)

Romack teaches various solvents useful in the first stage of cleaning including the following:

The organic co-solvent is, in general, a hydrocarbon co-solvent. Typically the co-solvent is an alkane co-solvent, with C.sub.10 to C.sub.20 linear, branched, and cyclic alkanes, and mixtures thereof (preferably saturated) currently preferred. The organic co-solvent preferably has a flash point above 140.degree. F., and more preferably has a flash point above 170.degree. F. The organic co-solvent may be a mixture of compounds, such as mixtures of alkanes as given above, or mixtures of one or more alkanes in combination with additional compounds such as one or more alcohols (e.g., from 0 or 0.1 to 5% of a C1 to C15 alcohol (including diols, triols, etc.)). (see col. 2)

Claims 1, 6-9, 14-21, 32-44, and 54 are rejected under 35 U.S.C. 102(b) as being anticipated by Jureller et al (US 5,683,977).

Jureller teaches the following two step cleaning process:

"The dry cleaning system may also be designed to include a modifier, such as water, or an organic solvent up to only about 5% by volume; enzymes up to about 10 wt. % and a bleaching agent such as a peracid.

In a second aspect of the invention, a method for dry cleaning a variety of soiled fabrics is provided wherein a selected surfactant and optionally a modifier, an enzyme, bleaching agent or mixtures thereof are combined and the cloth is contacted with the mixture. Densified carbon dioxide is introduced into a cleaning vessel which is then pressurized from about 700 psi to about 10,000 psi and heated to a range of about 20.degree. C. to about 100.degree. C. Fresh densified carbon dioxide is used to flush the cleaning vessel." (see col. 2)

Jureller teaches compounds that can be added to the first stage of cleaning including the following:

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Densified carbon dioxide, preferably supercritical fluid carbon dioxide, is used in the inventive dry cleaning system. It is noted that other densified molecules having supercritical properties may also be employed alone or in mixture. These molecules include methane, ethane, propane, ammonia, butane, n-pentane, n-hexane, cyclohexane, n-heptane, ethylene, propylene, methanol, ethanol, isopropanol, benzene, toluene, p-xylene, sulfur dioxide, chlorotrifluoromethane, trichlorofluoromethane, perfluoropropane, chlorodifluoromethane, sulfur hexafluoride and nitrous oxide. (see col. 3)

Jureller teaches various surfactants (i.e. high molecular weight organic solvents) also suitable for the addition to the first stage of cleaning including the following:

A surfactant which is effective for use in a densified carbon dioxide dry cleaning system requires the combination of densified carbon dioxide -philic functional groups with densified carbon dioxide -phobic functional groups (see definitions above). The resulting compound may form reversed micelles with the CO.sub.2 -philic functional groups extending into a continuous phase and the CO.sub.2 -phobic functional groups directed toward the center of the micelle.

(23) The surfactant is present in an amount of from 0.001 to 10 wt. %, preferably 0.01 to 5 wt. %.

(24) The CO.sub.2 -philic moieties of the surfactants are groups exhibiting low Hildebrand solubility parameters, as described in Grant, D. J. W. et al. "Solubility Behavior of Organic Compounds", Techniques of Chemistry Series, J. Wiley & Sons, N.Y. (1990) pp. 46-55 which describes the Hildebrand solubility equation, herein incorporated by reference. These CO.sub.2 -philic moieties also exhibit low polarizability and some electron donating capability allowing them to be solubilized easily in densified fluid carbon dioxide.

(25) As defined above the CO.sub.2 -philic functional groups are soluble in densified carbon dioxide to greater than 10 weight percent, preferably greater than 15 weight percent, at pressures of 500-10,000 psi and temperatures of 0.degree.-100.degree. C.

(26) Preferred densified CO.sub.2 -philic functional groups include halocarbons (such as fluoro-, chloro- and fluoro-chlorocarbons), polysiloxanes and branched polyalkylene oxides (i.e. ether).

(27) The CO.sub.2 -phobic portion of the surfactant molecule is obtained either by a hydrophilic or a hydrophobic functional group which is less than 10 weight percent soluble in densified CO.sub.2, preferably less than 5 wt. %, at pressures of 500-10,000 psi and temperatures of 0.degree.-100.degree. C. Examples of moieties contained in the CO.sub.2 -phobic groups include polyalkylene oxides, carboxylates, branched acrylate esters, C.sub.1-30 hydrocarbons, aryls which are unsubstituted or substituted, sulfonates, glycerates, phosphates, sulfates and carbohydrates. Especially preferred CO.sub.2 -phobic groups include C.sub.2-20 straight chain or branched alkyls, polyalkylene oxides, glycerates, carboxylates, phosphates, sulfates and

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carbohydrates.

(28) The CO.sub.2 -philic and CO.sub.2 -phobic groups may be directly connected or linked together via a linkage group. Such groups include ester, keto, ether, amide, amine, thio, alkyl, alkenyl, fluoroalkyl or fluoroalkenyl. (see col. 4).

Jureller further teaches the use of hydrofluoroethers (see cols 5-6, lines 30-68), and polyol solvents (see cols. 9-10, lines 45-68).

Claims 1-5, 10-38, and 42-54 are rejected under 35 U.S.C. 102(e) as being anticipated by Cauble et al (US 6,491,730).

Cauble teaches a method of pretreating fabrics before dry cleaning with carbon dioxide (see title and abstract). A more detailed description is given in the following:

"A method for dry-cleaning garments or fabrics in carbon dioxide, said garment or fabric including a stained portion comprises pre-treating the stained portion of a garment or fabric article to be cleaned with a liquid pretreatment composition, said composition preferably containing a pretreatment surfactant. The pretreatment step is followed by the steps of contacting the article with a liquid dry cleaning composition for a time sufficient to clean the article, said liquid dry-cleaning composition comprising a mixture of carbon dioxide and a cleaning surfactant; and then separating the article from the liquid dry cleaning composition. " (see cols. 1-2)

Cauble teaches the following pretreatment solvents:

"The organic co-solvent is, in general, a hydrocarbon co-solvent. Typically the co-solvent is an alkane co-solvent, with C.sub.10 to C.sub.20 linear, branched, and cyclic alkanes, and mixtures thereof (preferably saturated) currently preferred. The organic co-solvent preferably has a flash point above 140.degree. F., and more preferably has a flash point above 170.degree. F. The organic co-solvent may be a mixture of compounds, such as mixtures of alkanes as given above, or mixtures of one or more alkanes. Additional compounds such as one or more alcohols (e.g., from 0 or 0.1 to 5% of a C1 to C15 alcohol (including diols, triols, etc.)) different from the organic co-solvent may be included with the organic co-solvent.

Examples of suitable co-solvents include, but are not limited to, aliphatic and aromatic hydrocarbons, and esters and ethers thereof, particularly mono and di-esters and ethers (e.g., EXXON ISOPAR L, ISOPAR M, ISOPAR V, EXXON EXXSOL, EXXON DF 2000, CONDEA VISTA LPA-170 N, CONDEA VISTA

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LPA-210, cyclohexanone, and dimethyl succinate), alkyl and dialkyl carbonates (e.g., dimethyl carbonate, dibutyl carbonate, di-t-butyl dicarbonate, ethylene carbonate, and propylene carbonate), alkylene and polyalkylene glycols, and ethers and esters thereof (e.g., ethylene glycol-n-butyl ether, diethylene glycol-n-butyl ethers, propylene glycol methyl ether, dipropylene glycol methyl ether, tripropylene glycol methyl ether, and dipropylene glycol methyl ether acetate), lactones (e.g., (gamma)butyrolactone, (epsilon)caprolactone, and (delta) dodecanolactone), alcohols and diols (e.g., 2-propanol, 2-methyl-2-propanol, 2-methoxy-2-propanol, 1-octanol, 2-ethyl hexanol, cyclopentanol, 1,3-propanediol, 2,3-butanediol, 2-methyl-2,4-pentanediol) and polydimethylsiloxanes (e.g., decamethyltetrasiloxane, decamethylpentasiloxane, and hexamethyldisiloxane), etc." (see col. 3)

Cauble teaches the following surfactants suitable for their invention:

"Numerous surfactants are known to those skilled in the art. See, e.g., McCutcheon's Volume 1: Emulsifiers & Detergents (1995 North American Edition) (MC Publishing Co., 175 Rock Road, Glen Rock, N.J. 07452). Examples of the major surfactant types that can be used to carry out the present invention include the: alcohols, alkanolamides, alkanolamines, alkylaryl sulfonates, alkylaryl sulfonic acids, alkylbenzenes, amine acetates, amine oxides, amines, sulfonated amines and amides, betaine derivatives, block polymers, carboxylated alcohol or alkylphenol ethoxylates, carboxylic acids and fatty acids, diphenyl sulfonate derivatives, ethoxylated alcohols, ethoxylated alkylphenols, ethoxylated amines and/or amides, ethoxylated fatty acids, ethoxylated fatty esters and oils, fatty esters, fluorocarbon-based surfactants, glycerol esters, glycol esters, heterocyclic-type products, imidazolines and imidazoline derivatives, isethionates, lanolin-based derivatives, lecithin and lecithin derivatives, lignin and lignin derivatives, maleic or succinic anhydrides, methyl esters, monoglycerides and derivatives, olefin sulfonates, phosphate esters, phosphorous organic derivatives, polyethylene glycols, polymeric (polysaccharides, acrylic acid, and acrylamide) surfactants, propoxylated and ethoxylated fatty acids alcohols or alkyl phenols, protein-based surfactants, quaternary surfactants, sarcosine derivatives, silicone-based surfactants, soaps, sorbitan derivatives, sucrose and glucose esters and derivatives, sulfates and sulfonates of oils and fatty acids, sulfates and sulfonates, ethoxylated alkylphenols, sulfates of alcohols, sulfates of ethoxylated alcohols, sulfates of fatty esters, sulfonates of benzene, cumene, toluene and xylene, sulfonates of condensed naphthalenes, sulfonates of dodecyl and tridecylbenzenes, sulfonates of naphthalene and alkyl naphthalene, sulfonates of petroleum, sulfosuccinamates, sulfosuccinates and derivatives, taurates, thio and mercapto derivatives, tridecyl and dodecyl benzene sulfonic acids, etc." (see col. 4)

Cauble teaches the use of cyclic terpenes (see abstract).

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Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,355,072. Although the conflicting claims are not identical, they are not patentably distinct from each other because the prior art teaches the cleaning vessel is not pressurized during the pretreatment. The instant claim is silent about the pressure of the vessel and one of ordinary skill in the art would read this to mean atmospheric conditions (i.e. non-pressurized).

Similarly instant claims 10-13 are obvious variations of the prior art claims 11-13. The only modification being the one cited above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 703-305-4945. The examiner can normally be reached on 9:00-17:30 (m-f).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 703-308-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9310 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

A handwritten signature in black ink, appearing to be 'G. Webb', written in a cursive style.

Gregory E. Webb
Primary Examiner
Art Unit 1751

gw
May 14, 2003